

## GENERAL NOTE

### AN INTER-SUBFAMILIAL MATING INVOLVING AN ENDANGERED BUTTERFLY (LYCAENIDAE: LYCAENINAE AND RIODININAE)

I report here an inter-subfamilial mating between a female *Euphilotes battoides allyni* (Shields) (Lycaeninae) and a male *Apodemia mormo virgulti* (Behr) (Riodininae). The former is commonly known as the El Segundo blue butterfly, and is recognized as endangered by the U.S. Fish & Wildlife Service.

The mating was observed on 18 July 1984 at a remnant of the El Segundo sand dune system at the western end of the Los Angeles International Airport (LAX), Los Angeles Co., CA. During July and August 1984, I conducted a capture-recapture study of the El Segundo blue at LAX to collect baseline information on the butterfly's ecological requirements and to estimate its population size. My study was sponsored by the California Department of Fish & Game.

The mating pair (Fig. 1) was first noted at 1232 h PDT perched about 4 cm above the ground on foliage of *Erysimum suffrutescens* (Abrams) G. Rossb. (Brassicaceae). The wing condition of both specimens was fresh, suggesting they were no more than a few days old. The crucifer was surrounded by a patch of about 15 *Eriogonum parvifolium*



FIG. 1. The inter-subfamilial mating pair, *Euphilotes battoides allyni* (top) and *Apodemia mormo virgulti* (bottom).

Sm. in Rees. (Polygonaceae), larval and primary adult foodplant of both lycaenids at LAX. These plants were located approximately 75 m E of the airport's main radar installation in the SE portion of the dunes, where they grew just below the ridgetop of a sand hill at about 50 m elevation. Earlier, at 1207 h PDT, I recorded a temperature of 31°C, with bright, sunny skies, and a slight breeze from the W measuring about 8 km/h.

While I tried to photograph the mating pair, it made three short flights, moving no more than about 3 m with each effort. The female *allyni* was the active flyer. The pair first landed on the sandy substrate, then on a dead specimen of *Erysimum suffrutescens*, and finally on a twig of an unidentified dead plant. Copulation ceased at 1337 h PDT, and the female *allyni* immediately flew away, while the male *virgulti* remained motionless for another 4 min before it resumed normal activity.

The female *allyni* was marked while the pair was mating, and it was observed later that day nectaring and ovipositing on *E. parvifolium* in the same area. I collected a single egg and the female to obtain more eggs. During the next 3 days, the female *allyni* laid 22 eggs in confinement before expiring. Upon dissecting the female's abdomen, I found a properly formed spermatophore. The eggs were examined microscopically and compared to fertile *allyni* eggs. All eggs were typical of *allyni*; however, none were viable. I previously reared *allyni* and found that larvae hatch within 4 to 8 days after oviposition (Arnold, 1983, Univ. Calif. Publ. in Entomol. 99:1-161). I dissected all 23 eggs about 3 weeks after they were laid, and found no evidence of developing larvae. Probably a breakdown in a premating, reproductive-isolating mechanism (perhaps behavioral stimuli) led to this unusual mating, but apparently no hybrid offspring were produced due to the action of one or more postmating, reproductive-isolating mechanisms such as gametic mortality, zygotic mortality, or hybrid inviability.

RICHARD A. ARNOLD, 50 Cleaveland Road #3, Pleasant Hill, California 94523.

Received for publication 30 January 1986; accepted 22 April 1986.